

# The Case for Solar-Storage RA Values

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# About CESA



The **California Energy Storage Alliance (CESA)** is a 501c(6) membership-based advocacy group committed to advancing the role of energy storage in the electric power sector through policy, education, outreach, and research.

**CESA's mission** is to make energy storage a mainstream resource to advance a more affordable, efficient, reliable, safe, and sustainable electric power system for all Californians.



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# Background

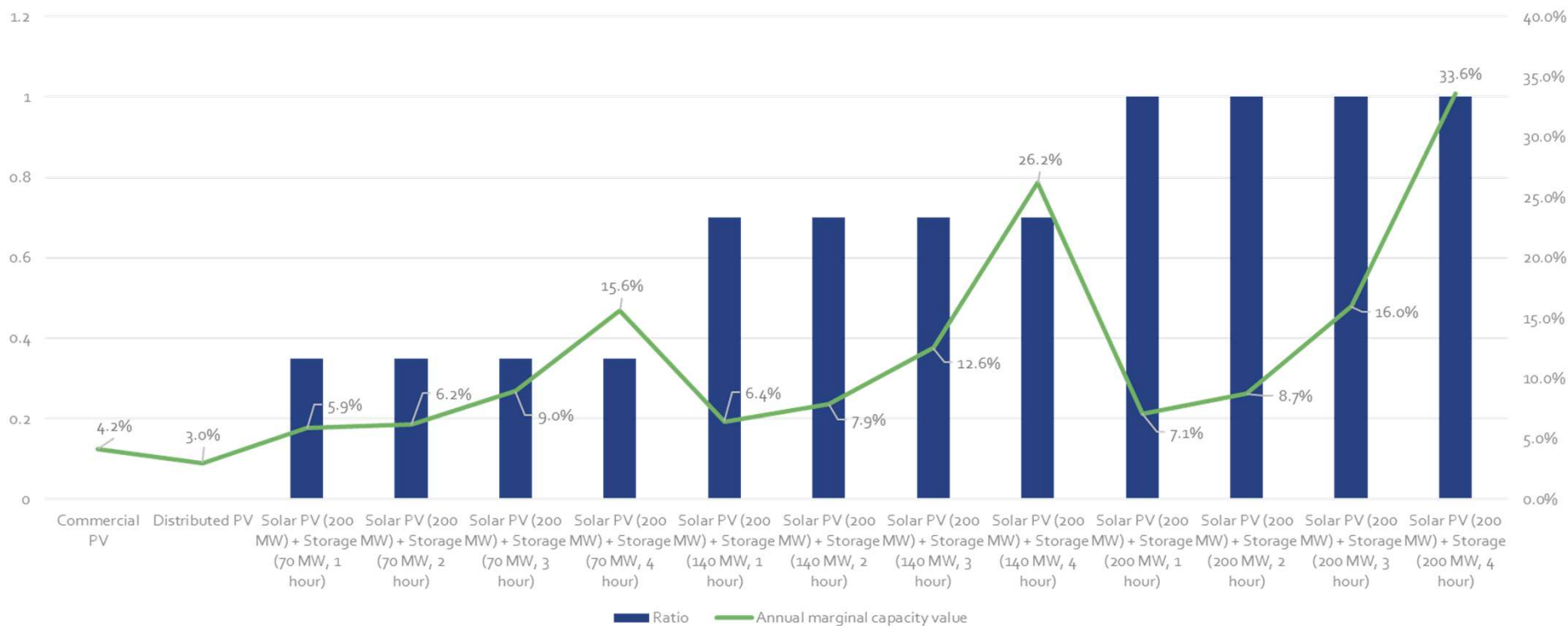
- Effective Load Carrying Capacity (ELCC) informs capacity values that, in turn:
  - Affect power purchase agreements (PPA) and RFO selection
  - Affect RA capacity calculations, mainly for System and Local RA, including residual RA requirements
- ELCC is currently calculated in an average, class-wide fashion, not considering several technological or locational sub-classes
- Renewable resources paired and operated in an “enmeshed” fashion with storage do not receive an ELCC different from that of standalone resources
- Solar + storage resources provide cost savings for ratepayers in the form of reduced deployment costs from shared facilities, ITC capture, etc.
- Interconnection queue reflects high interest in solar + storage

## Some Internal Modeling

- CESA used RECAP, an E3 public model used for marginal ELCC calculations, to test if solar profiles modified by storage would achieve a higher marginal ELCC
- Our modeling was conducted with solar-plus-storage profiles optimized for energy revenues and it suggested new categories for solar + storage are warranted
  - Standalone PV has very low marginal capacity values within RECAP, around 4% annually
  - In contrast, solar + storage resources achieve between 5% and 33% depending on duration and sizing
- The CPUC must consider that not all paired resources are equal
  - For solar + storage resources, storage duration and solar-to-storage sizing ratios cause significant differences
- RECAP does not currently accommodate sub-hourly profile modifications, so sub-hourly storage additions to a solar profile cannot be accurately modeled for ELCC effects

# Some Internal Modeling

Annual marginal capacity value for PV projects, by storage to generator ratio.



# Benefits of Solar Hybrids

- Solar + storage resources may operate in ways differently than separate resources:
  - Resources can be sized and operated to maximize ITC while firming solar
  - Resource could operate to improve RA performance
  - Operations of resources may have multiple priorities that yield cost reductions (e.g., energy output, TOD optimization, ITC capture for storage)
- RA counting methodologies do not recognize incremental benefits to solar RA value through firmer or shifted operations
  - Transparency and stability in the capacity accounting treatment of plus-storage resources is necessary for new projects to secure financing and model their project economics
  - Project-specific counting methodologies such as through exceedance methodology could be used to capture this RA value, or some ELCC calculator could be developed

## Key Takeaways

- Given the falling marginal capacity value of solar, the CPUC should consider ways to incentivize retrofitting existing facilities and/or pairing future facilities in order to deliver more value for ratepayers
- The CPUC should pursue RA counts for solar + storage that reward the benefits of ‘firming’ and ‘shifting’ solar, including assessing:
  - RA counting methodologies for storage, especially when it comes to single versus two Resource IDs
  - ELCC methodologies for project-specific or “representative” solar + storage, including ELCC calculations of solar + storage resources separate from solar-only resources
  - CAISO’s categorizations of resources



# Thank you!

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